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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,835	02/18/2004	Richard A. Elco	FCI-2780/C2285B	3750
23377	7590	08/27/2004	EXAMINER	
WOODCOCK WASHBURN LLP ONE LIBERTY PLACE, 46TH FLOOR 1650 MARKET STREET PHILADELPHIA, PA 19103			LEE, BENNY T	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

BEST AVAILABLE COPY

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire Three (3) month(s), _____ days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-9 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-5, 7, 9 are rejected.
5. ☒ Claims 6, 8 are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other _____

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The disclosure is objected to because of the following informalities: Page 1, paragraph (0001), note that updated status information (i.e. patent number, issue date) should be provided for the parent application. Page 4, paragraph (0017), note that "FR4" should be rewritten as – FR-4- and – respectively, [~]should follow "back planes". Page 5, paragraph (0033), it is unclear if figure 16, is properly intended to be associated with prior art figure 13A." Page 5, paragraph (0034), 8th line therein, note that "(3)" should be relocated such as to line up underneath the other equation numbers, and in the 11th line therein parameter ^{"Z_o"} needs to be strictly defined. Page 7, paragraph (0042) and page 8, paragraph (0045), note that ^tchannel 102b" and "channel 102A" should be respectively separated. Page 7, paragraph (0044) first line therein note that – a—should precede "height". Page 8, paragraph (0048), second line therein note that "110" should correctly be – 100 --. Page 11, paragraph (0057), note that "substrates 24U, 24L" do not appear consistent with "conductive plate(s)" (24^U, 24^L) as recited in paragraph (0054). Page 11, paragraph (0058), fourth line therein, note that "X=0" does not appear consistent with the labeling in figure 15B". Page 12, equation (11), should a subscript ^{cripted} symbol be inserted between "Dr" and "1" for a proper equation? Note that the following coordinates need description in the following figures: (x, y) in figure 5, ^{"Z"} in figure 13A; "Y" in Figure 13B. Also, note that further elaboration as to the nature of the curves as depicted in figures 8, 9, 11, 12, 14, 16 need to be provided. Finally note that "p=3a" in figure 16 needs description in the specification..

Appropriate correction is required.

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The drawings are objected to because of the following: In figures 7B, 13A 15A^t, 15B, noteⁱ that for the features comprised of dielectric material thereⁱ, proper cross-hatching of dielectric material ~~therein proper cross-hatching of dielectric material~~ should be provided. In figure 16^{art}, should the drawing figure be labeled prior^{art} art^{nce} since it is associated with prior^{art} figure 13A?. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klebe or Williams (cited by applicant) in view of Butterweck (cited by applicant).

Klebe (fig. 2) or Williams (Fig. 2) each disclose first and second dielectric members or sections (31, 32 in Klebe; 11, 12 in Williams) characterized as substrates arranged in parallel to and spaced apart from each other. Note that the substrates are arranged such^{as} to define a waveguide cavity or channel (i.e. 35 in Klebe; 124 in Williams) upon which a conductive layer (i.e. plating step 43 in fig. 3 of Klebe; plating 15 of Williams) is laminated with respect to ~~upper~~^{upper,} the ~~board~~^(broad) lower and side walls of each dielectric substate, where the upper board wall and the lower broadwall are affixed to the first and second substrates, respectively to define a waveguide channel.

Each primary reference differs from the claimed invention in that the waveguide channel lacks at least one gap located in at least one of the upper and lower broad walls of the waveguide channel to effect odd mode TE propagation while suppressing even mode TE propagation.

Butterweck (Fig. 5) discloses a waveguide configuration where slot^s or gaps are disposed in upper and lower broad walls of the waveguide configuration to promote propagation of the H_{10} ^{mode} (i.e. corresponding to the first odd TE mode) while filtering out or suppressing higher order H_{m0} ($m \neq 1$) modes (e.g. the H_{20} or TE_{20} mode) as described by the description at the lower section of the left most column of page 278.

Accordingly it would have been obvious in view of the references taken as a whole to have modified the laminated waveguide and substrate configuration in either primary reference with the gaps as taught by the waveguide configuration of Butterweck

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(Fig. 5). Such a modification would have been obvious since the formation of the gaps in the waveguide of either primary reference would have imparted thereto the advantageous benefit of suppressing undesired higher order mode propagation while maintaining the primary mode propagation to analogous art waveguide configuration, thereby suggesting the obviousness of such modification. Furthermore, note that as an obvious consequence of the formation of gaps in the waveguide configuration of either primary reference, two, "C" shape waveguide cross-sections are formed.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4, 6-9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4, 7 of U.S. Patent No. 6590477. Although the conflicting claims are not identical, they are not patentably distinct from each other because the application claims recite an inventive embodiment, which is not patentably distinct from the claimed embodiment of the co-pending patent. Although the patent claims do not explicitly recite first and second substrates, it should be noted that in an obviousness double patenting rejection, the teachings in those

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portions of the specification which support the patent claims can also be relied on in an obviousness double patenting rejection (see MPEP 804(II)(B)(1)). For the particular patent, the relied upon patent claims correspond to and hence is only supported by the embodiment of Fig. 7B. As is evident from the fig. 7B embodiment, in addition to the claim waveguide configuration and function, such waveguides are sandwiched between upper and lower dielectric substrates (118A, 118B). Accordingly, the relied upon patent claims and the patent's specification support thereof suggests that the scope of coverage of the relied upon patent claims encompasses the dielectric substrates in Fig. 7B embodiment, despite lack of any explicit recitation of the dielectric substrates. Thus, for this reason, the patent and application claims are not patentably distinct from each other.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Elco ('281) is the parent patent. Meinke discloses a waveguide with slots therein to promote and suppress particular wave modes.

Any inquiry concerning this communication should be directed to Benny T. Lee at telephone number (571)-272-1764.

Lee/ds

08/23/04 .


Benny T. Lee
Primary Examiner